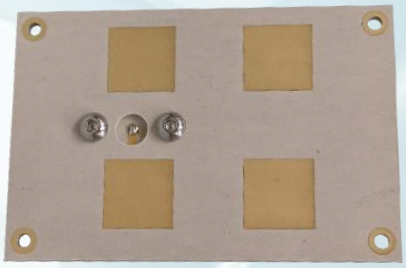
X Band Antenna

09-22

➔ patch antenna 60 x 40 mm²
➔ 8.025 – 8.400 GHz or
➔ 7.145 – 7.250 GHz

Highlights

- **Circular polarization (RHCP)**
- **High gain**
- **Ultra-small shape**
- **Low mass**
- **Compatible to 1U CubeSat**
- **Robust design**



This COTS **antenna** is designed for pico and nano satellite applications to realize satellite links. The mechanical dimensions fit a 1U CubeSat as well as larger satellites.

With circular polarization, the antenna provides a robust solution regarding the steering accuracy to the ground station antenna.

Due to the four combined patches, a high antenna gain can be achieved, considering small form factor requirements.

As RF interface, a robust SMA (female) connector is used. Four screws provide a proper mounting of the antenna.

The antenna backside shall be grounded properly to the satellite chassis. As dielectric, ROGERS™ laminate for space applications is used. Patches and conductors are Cu with NiAu surface finish.

With the basic design TRL 9 has been achieved with various successful LEO missions. Alternative designs for X band uplink frequency and X band downlink frequency are available.

Features

- Flight grade tested design
- Patch antenna design
- Cost effective
- Short delivery time

Key Specifications

• Operation frequency:	8.025-8.400 GHz 7.145-7.250 GHz
• Maximum gain (main direction):	10 dBi
• Half power beam width:	40°
• RF power input:	< 2 W
• VSWR:	< 1.4 typ. < 1.8 @ full BW
• Impedance:	50 Ω
• Polarization:	RHCP (opt. LHCP)
• Temperature range:	-30°C … +60°C
• Mass:	20 grams
• Type:	Patch
• Connector type:	SMA (f)
• Outer dimensions (x/y/z, w/o connector):	60 x 40 x 1.8 mm³

Product specification may be subject to change without notification.